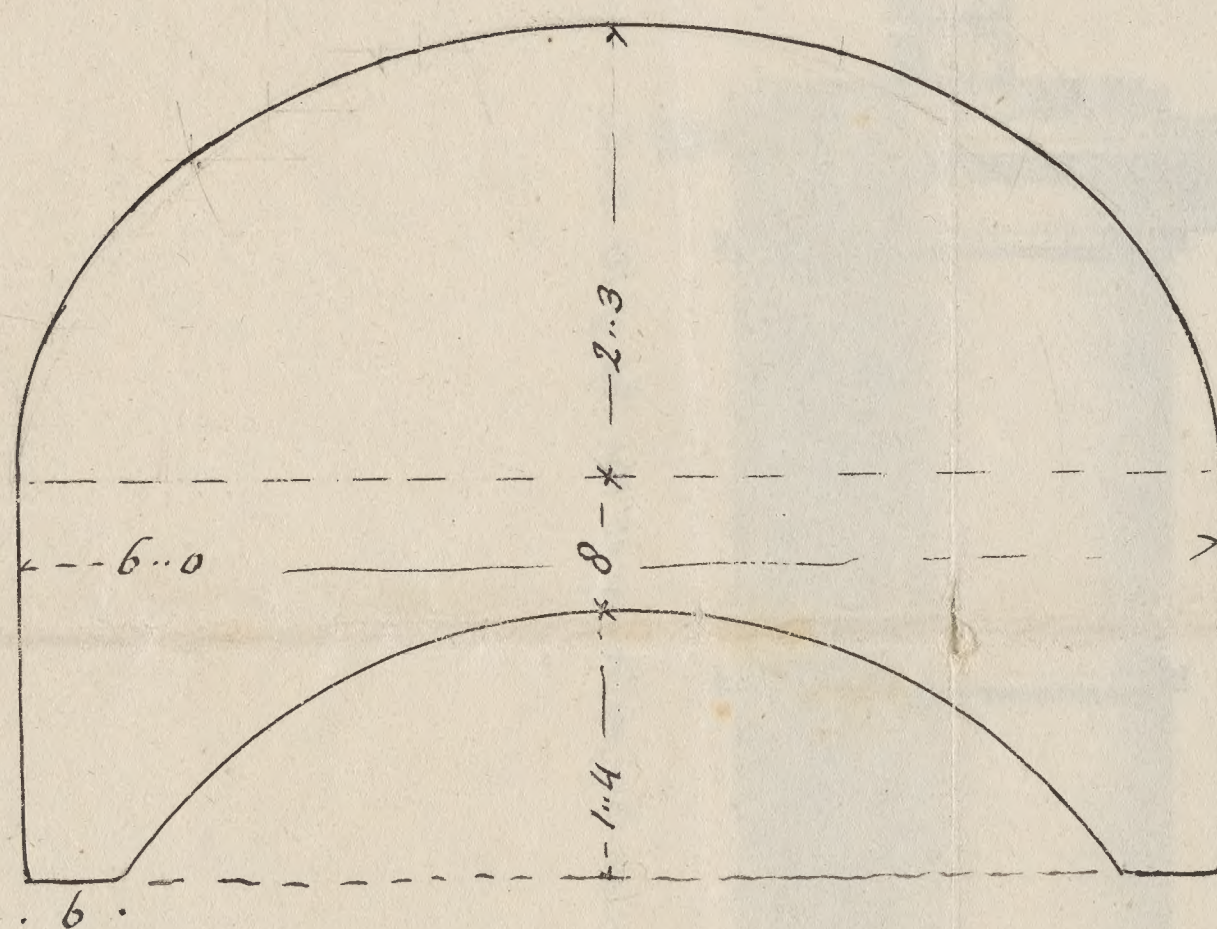


Section of the Boiler



Rob<sup>ts</sup> Fulton Esq  
London

25 July 1804

Sir

We have your favour of the 20<sup>th</sup> and shall accordingly make the Air pump, its bucket & clack of brass, and its rod of Copper. The Condenser will do very well of Iron, and we should propose to execute it in the manner represented in the annexed sketch, which is sent for your approbation previous to our commencing the execution. The Air pump, you will see, is placed in the Condenser, which is a construction we have sometimes practiced, the mouth through which the water & air are discharged, is drawn towards one side, but it may be placed in any direction you wish it to have. I recommend that the Cylinder should be placed on a solid block of stone or wood, rather than on the edge of the Cistern, which may be of less dimensions than you had sketched.

The Boiler should be about 16 feet long to supply the Engine with steam at 20 strokes per minute full load; and in proportion for a less supply, if you should wish to make it capable only of working the Engine at a slower rate. It is supposed to have no flues at the sides or ends, the chimney flue should have an area of 400 or 500 Inches.

We have not had the opportunity of making any



any direct observation upon the rapidity with which salt would be formed in the boiler from sea water, but we conceive you will have no difficulty in carrying with you a sufficient quantity of fresh water for its supply: if not, the evil must be guarded against by frequent emptying and cleaning. — We shall be glad to have your sentiments, when your leisure gives the sketch the necessary consideration I remain Sir  
 Your obedient servant  
 Boulton & Watt<sup>rs</sup>

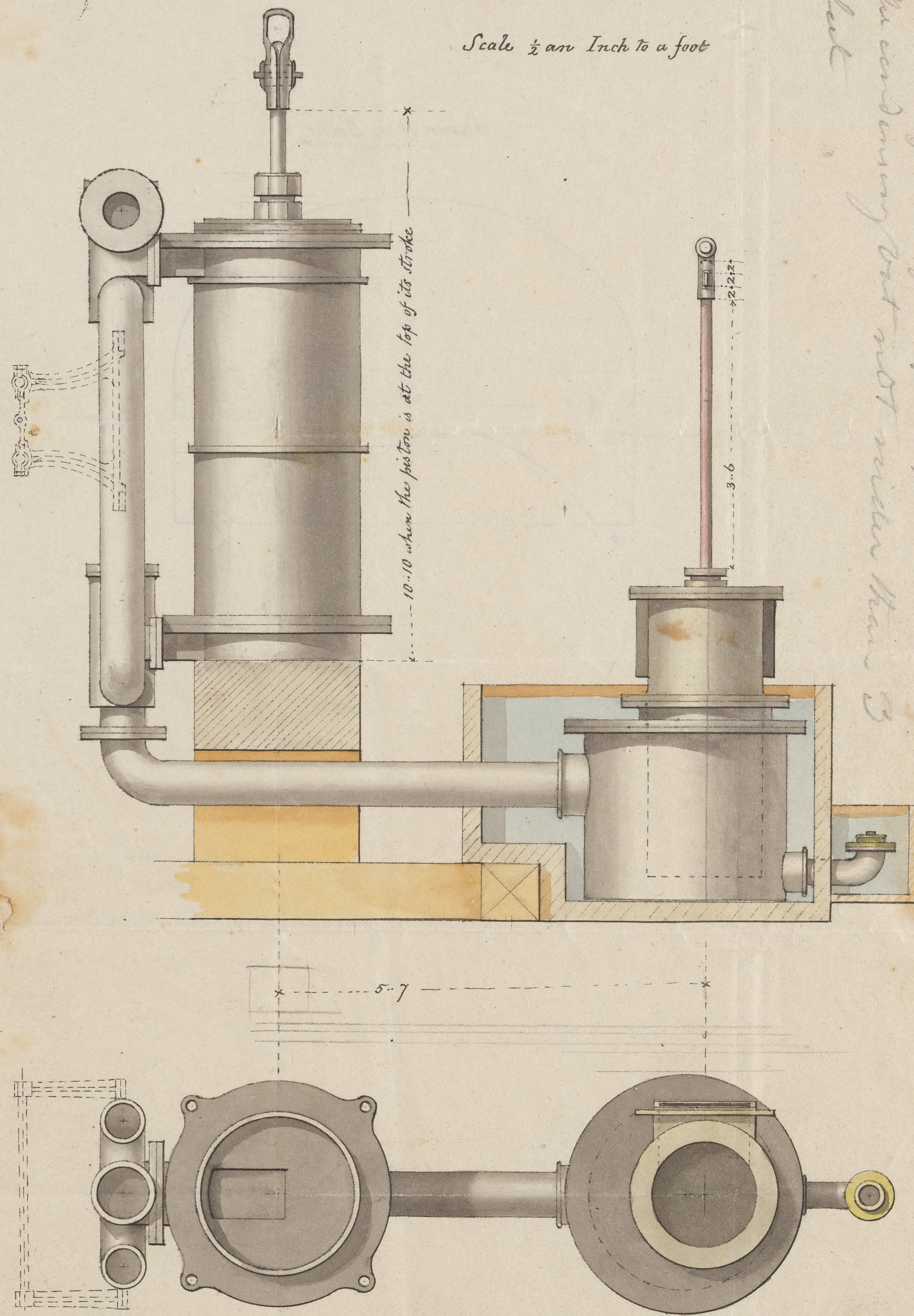
BIRMINGHAM

Robert Francis Esqr  
 Honey's Gate Coffee house  
 George Street  
 Westminster

20 Clock  
 27  
 1804 A.M.

III.

Scale  $\frac{1}{2}$  an Inch to a foot



vertical in No. 28 fully showing a condenser  
 14 in long by 4 feet by 2 1/2 in 20 horse power  
 the condenser not more than 15  
 feet